

Some new *Anisochrysa*-species from Anterior Asia (Planipennia, Chrysopidae)

by

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Among the material collected by several entomological expeditions to Iran and Afghanistan during the last few years, four hitherto apparently unknown species of the chrysopid genus *Anisochrysa* Nakahara were found, the descriptions of which are given below.

For the loan of the interesting material I wish to express my sincere thanks to Univ. Doz. Dr. H. ASPÖCK, Vienna and Dr. H. G. AMSEL, Landessammlungen für Naturkunde, Karlsruhe.

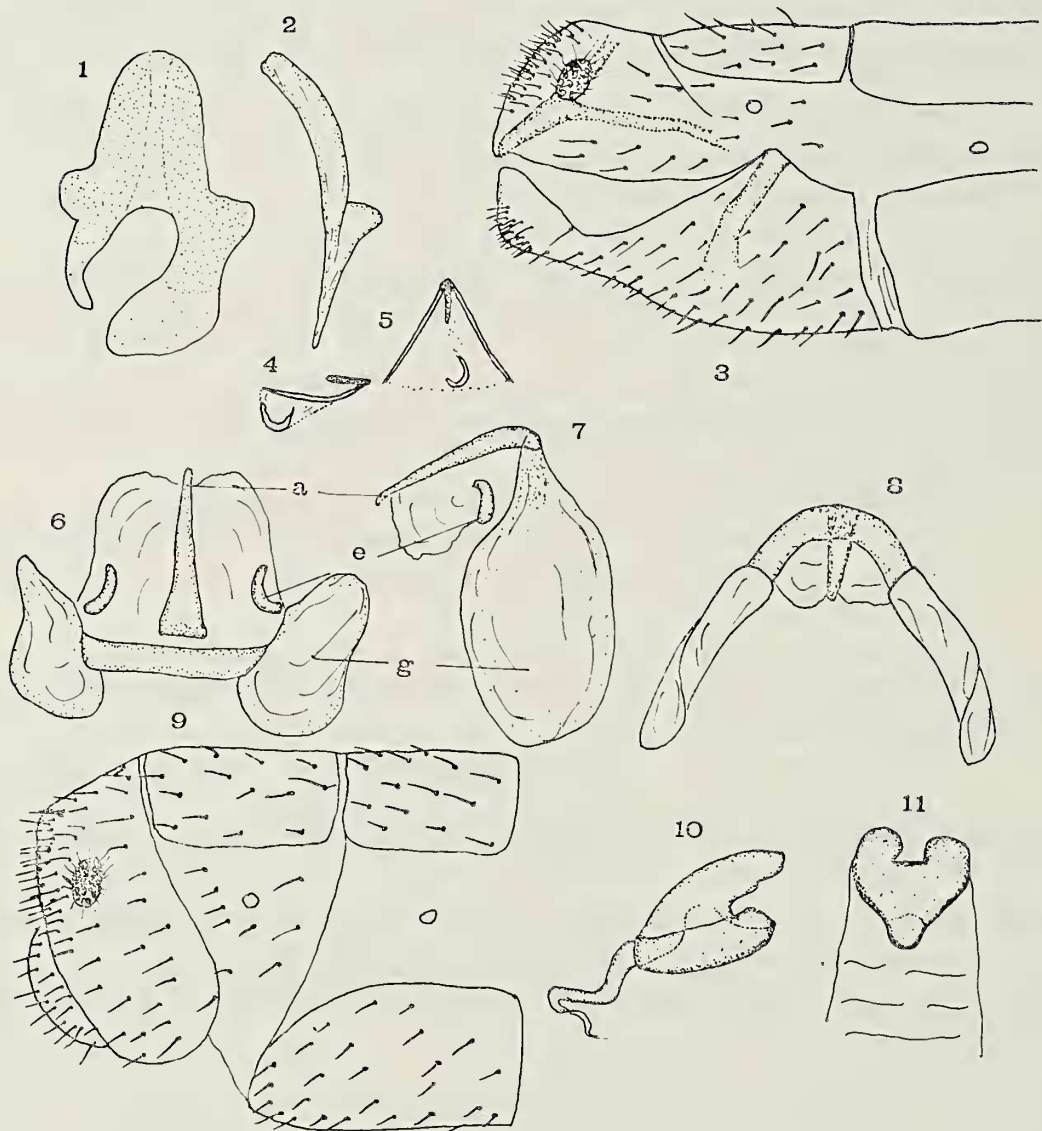


Fig. 1—11. *A. afghanica* n.sp. — 1: gonapsis, dorsally; 2: same, laterally; 3: apex of male abdomen, laterally; 4: hypandrium internum, laterally; 5: same, dorsally; 6: gonarcus with arcessus and entoprocessus, caudally; 7: same, laterally; 8: same, dorsally; 9: apex of female abdomen, laterally; 10: spermatheca, laterally; 11: subgenitale, ventrally. (e = entoprocessus, g = gonarcus, a = arcessus).

Anisochrysa (Apertochrysa) afghanica n.sp.

Available material: 1 ♂ (holotype), 1 ♀ (paratype) Afghanistan, Koh-i-Baba Südseite, Panjao 2650 m, 20.22.VII.1966 AMSEL & EBERT leg. (coll. Karlsruhe).

Description of holotype. Size: length of body 8 mm, of forewing 11 mm, of hindwing 10 mm. General colouration green. Head without any spots. Palpi blackish with pale annulations at joints. Antennae shorter than forewings, green at base, gradually darkening towards tip, the distal part appearing brownish; pedicel annulated with black. Thorax green with a dorsal longitudinal yellow stripe; short dark bristles, especially on pronotum. Wings hyaline without spots or shadings; pterostigma indistinct. Longitudinal veins green; crossveins in costal area almost totally dark, only parts near C green; basal crossvein between Sc and R black, gradates dark; most of all other crossveins dark at both ends. Intramedian cell elongate, the tip reaching beyond the 1st radio-medial crossvein. Gradates of forewings 3.6, of hindwings 2.6 (left) and 2.5 (right); veins with short dark hairs, fringes short, black. Legs green with short black hairs, tarsi brown, claws with a rectangular tooth. Abdomen green with short dark hairs. Apex as shown in fig. 3. Gonarcus arched with broad lateral portions, arcessus long and slender, dilated proximally (fig. 6-8); small curved entoprocessus; hypandrium internum with combs (figs. 4, 5). Gonapsis flattened and slightly curved in lateral view, its distal portion split into two parts, the left one very narrow and small as shown in figs. 1, 2. The apex of the female abdomen, the subgenitale and the spermatheca are illustrated in figs. 9—11.

A. afghanica n.sp. is the first species of the subgenus *Apertochrysa* Tjeder which has been found in the palaeartic region. Only one species so far has been known from South Africa. The following three species belong to the subgenus *Anisochrysa* s.str. which is well known from the palaeartic region. From Iran, Afghanistan and West-Pakistan seven species have been listed hitherto: *A. venosa* Rambur, *sybaritica* McLachlan, *derbendica* Hölzel, *makrana* Hölzel, *murrensensis* Tjeder, *flavifrons* Brauer and *prasina* Burmeister.

Anisochrysa vartianorum n.sp.

Available material: 1 ♂ (holotype) West-Pakistan, Prov. Swat, Madyan 1400 m, 19.VI—4.VII.1971 VARTIAN leg. (coll. ASPÖCK).

Description of holotype. Size: length of body 8 mm, of forewing 10 mm, of hindwing 9 mm. General colouration brown; head pale brown, a blackish stripe on each gena and on each lateral margin of the clypeus. Palpi pale brown with black spots, segment 5 almost totally black. Antennae shorter than forewings, pale brown at base and darker brown at apex; scape with a dark longitudinal stripe on outer surface. Thorax pale brown, lateral margins of pronotum dark brown; hairiness pale. Wings hyaline without spots and shadings; pterostigma pale brown. Longitudinal veins pale, except anal veins of forewings which are

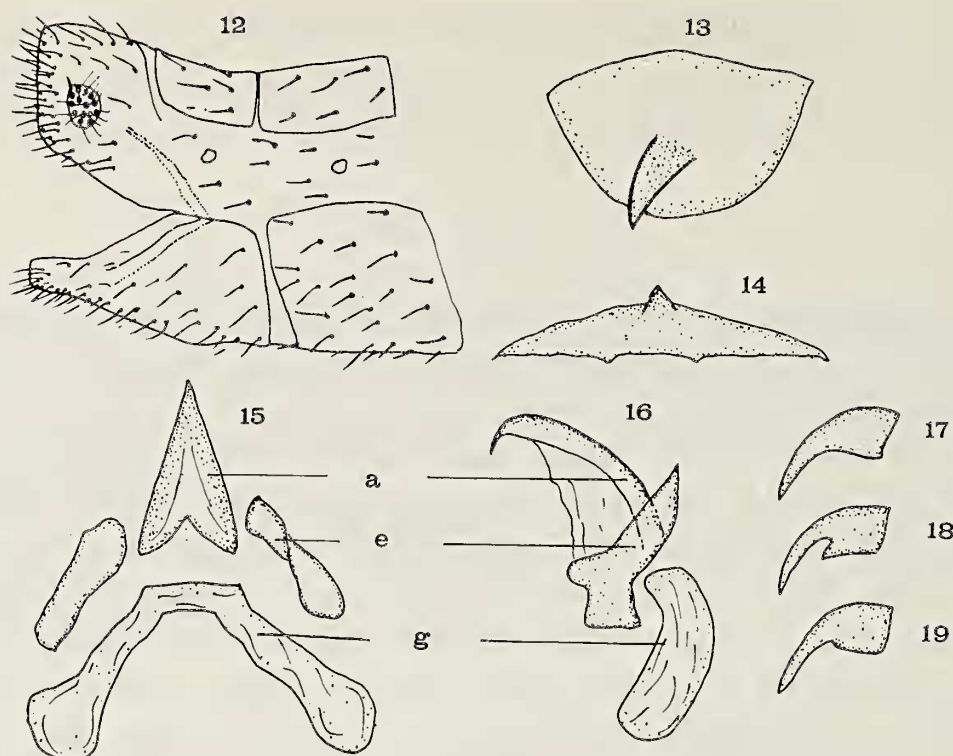


Fig. 12—16. *A. vartianorum* n.sp. — 12: apex of abdomen, laterally; 13: gonapsis, dorsally; 14: tignum, dorsally; 15: gonarcus with arcessus and entoprocessus, dorsally; 16: same, laterally; 17—19 claws of right hindleg ; 17: *A. vartianorum*; 18: *A. mira*; 19: *A. derbendica*.

almost totally dark brown; costa with a little dark spot basally; crossveins of costal area and gradates totally dark brown; all other crossveins dark brown at both ends. Intramedian cell elongate, the tip reaching beyond the first radio-medial crossvein. Gradates of forewings 3.4, of hindwings 2.4 (left) and 3.3 (right); veins with short dark hairs, fringes short, brown. Legs brown, claws simple i.e. without rectangular tooth. (fig. 17). Abdomen brown, apex as shown in fig. 12. Gonarcus arched with slender sidepieces and with large entoprocessus; arcessus slightly curved, dilated proximally with very acute apex (figs. 15, 16). Tignum flat, almost triangular; gonapsis a broad, slightly curved plate with a prominent strong tooth directed caudally (figs. 13, 14).

I name this species in honour of Mrs. E. and Mr. A. VARTIAN, Vienna, in admiration for their imposing entomological explorations in Anterior Asia.

Anisochrysa mira n.sp.

Available material: 1 ♂ (holotype), 5 ♂♂ 97 ♀♀ (paratypes), N-Iran, Elburzgebirge-Nordseite, Ask, Demavendgeb. 1800 m, 23.VII.1971, VARTIAN leg. (coll. ASPÖCK).

Description of holotype. Size: length of body 8 mm, of forewing 13 mm, of hindwing 12 mm. General colouration green; head green, almost without spots, only a black distinct stripe on lateral margins of clypeus. Maxillary and labial palpi pale, segment 5 almost totally black. Antennae shorter than forewings, green at base; flagellum brownish, pedicel annulated with black. Thorax green with a dorsal longitudinal pale yellow stripe. Pronotum with sparse dark

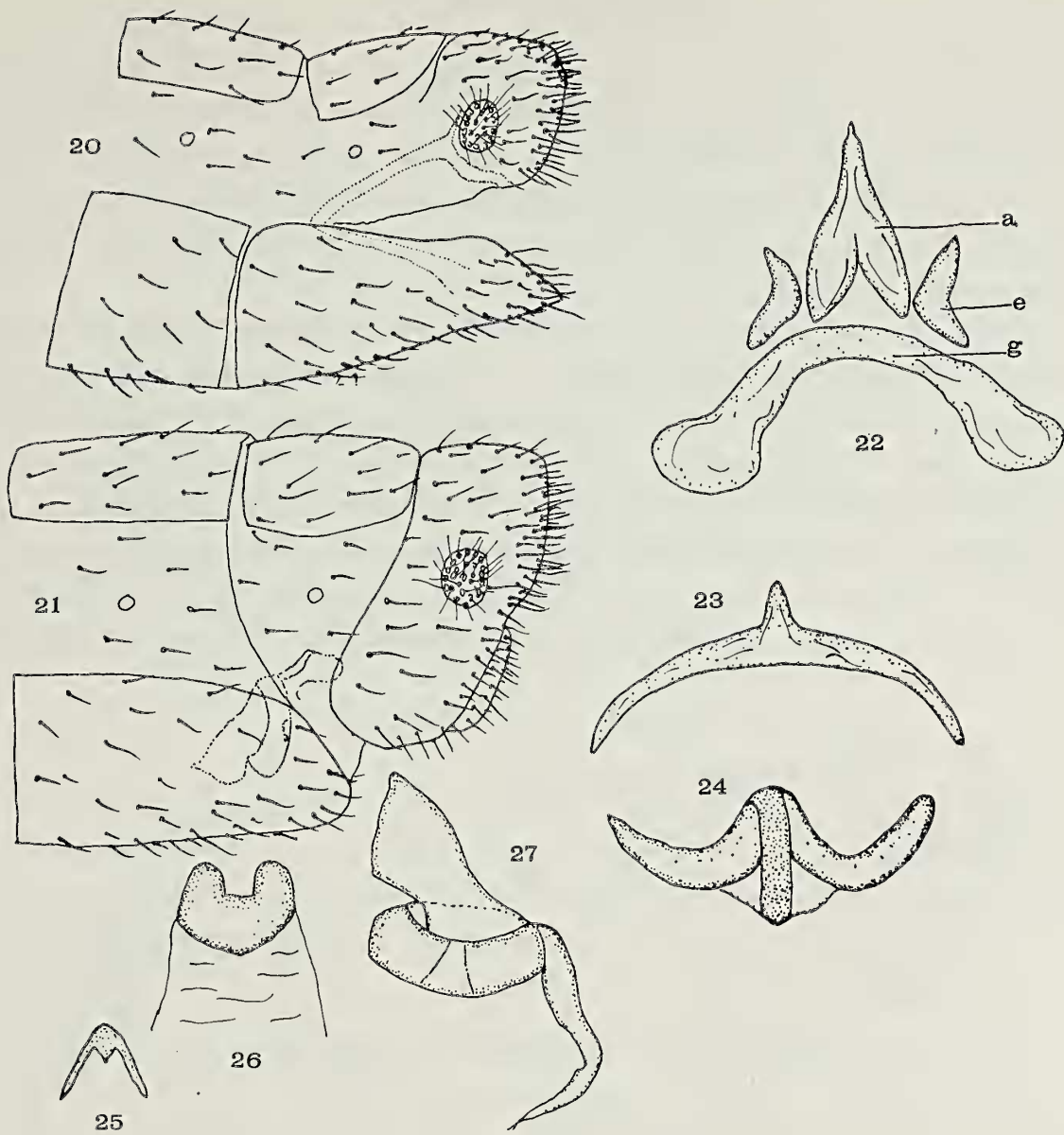


Fig. 20—27. *A. mira* n.sp. — 20: apex of male abdomen, laterally; 21: same of female; 22: gonarcus with arcessus and entoprocessus, dorsally; 23: tignum, dorsally; 24: gonapsis ventrally; 25: hypandrium internum, dorsally; 26: subgenitale, ventrally; 27: spermatheca, laterally.

hairs, lateral margins with small black spots. Wings hyaline without spots or shadings; pterostigma indistinct. Longitudinal veins mostly green, a little dark spot at base of costa; distal parts of anal veins of forewings black; crossveins of costal area almost totally blackish; basal crossvein between Sc and R and gradates black; all other crossveins dark at both ends. Intramedian cell elongate, the tip extends beyond the first radio-medial crossvein. Gradates of forewings 4.7 (left) 3.7 (right) of hindwings 3.7; veins with short black hairs, fringes short, black. Legs green with short dark hairs, tarsi brownish, claws with a rectangular tooth. Abdomen green with pale hairs, apex as shown in fig. 20. Gonarcus arched with broad sidepieces and with large elongate entoprocessus; arcessus almost triangular in dorsal view with narrow acute tip (fig. 22). Tignum archlike with long and acute acumen (fig. 23); gonapsis with a broad central piece, its apical part broad and round, lateral pieces crescent (fig. 24). The apex of the female abdomen, the subgenitale and the spermatheca are illustrated in figs. 21, 26, 27.

Anisochrysa dubia n.sp.

Available material: 1 ♂ (holotype), 12 ♂♂ 28 ♀♀ (paratypes), Afghanistan, Prov. Kadaghan, Salang-Pass, N-Seite, 2400 m, 9.VII.1969 and 11—12.VII.1971; 2 ♀♀ (paratypes), 30 km NW of Kabul, Paghman, 2100 m, 20—30.VII.1962 and 2500 m, 12.VI.1965, VARTIAN leg. (coll. ASPÖCK); 3 ♀♀ (paratypes) Koh-i-Baba, S-Seite, Panjao, 2650 m, 20—22.VII.1966 AMSEL & EBERT leg. (coll. Karlsruhe).

Description of holotype. Size: length of body 9 mm, of forewing 13 mm, of hindwing 12 mm. General colouration green; head green, almost without spots, only a black narrow stripe on lateral margins of clypeus; palpi pale with black spots. Antennae shorter than forewings, green at base and brownish at apex; pedicel annulated with black. Thorax green with a dorsal longitudinal yellow stripe; pronotum with sparse black hairs, the yellow median stripe on each side bordered by a narrow blackish curved line; lateral margins with small black spots. Wings hyaline without shadings or spots; pterostigma indistinct. Longitudinal

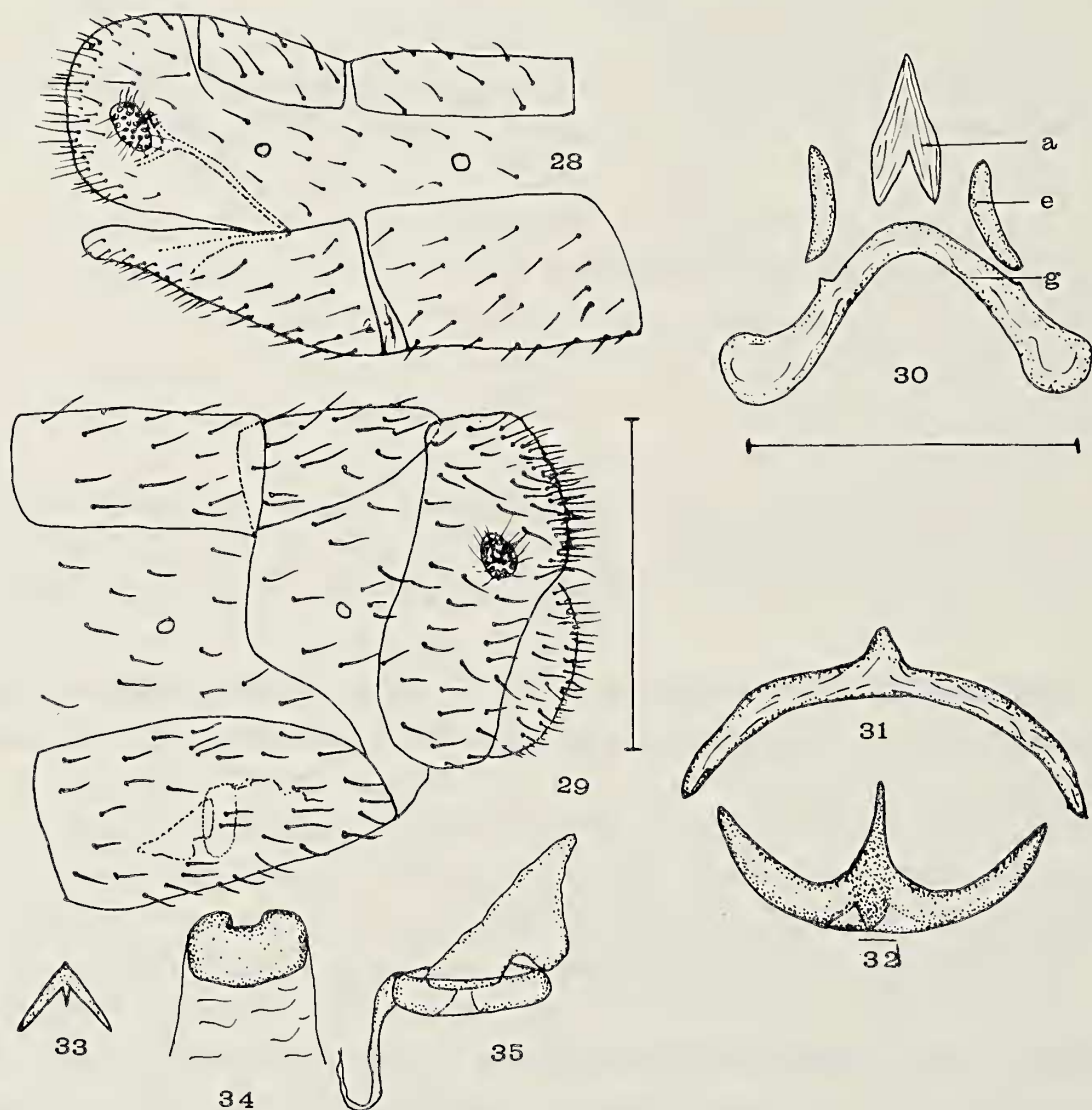


Fig. 28—35. *A. dubia* n.sp. — 28: apex of male abdomen; 29: same of female; 30: gonarcus with arcessus and entoprocessus, dorsally; 31: tignum, dorsally; 32: gonapsis, ventrally; 33: hypandrium internum, dorsally; 34: subgenitale, ventrally; 35: spermatheca, laterally. Measures: Fig. 29 1 mm, Fig. 30 0.5 mm.

R

veins green, base of costa with a little dark spot; Rs of all wings thickened. Crossveins in costal area dark at Sc, the basal crossvein totally black; basal crossvein between Sc and R black at Sc; base of Rs dark, crossveins between R and Rs dark at both ends; branches from Rs dark at Rs, veins between pseudomedia and pseudocubitus dark at both ends. Intramedian cell elongate, the tip extends beyond the first radio-medial crossvein. Gradates of forewings 4.6 of hindwings 3.5 (left), 5.5 (right). Veins with short black hairs, fringes short, black. Legs yellowish-green with short dark hairs, tarsi brownish, claws with a rectangular tooth. Abdomen green with pale hairs, apex as shown in fig. 28. Gonarcus arched with basally broad side-pieces; arcessus almost triangular in dorsal view with narrow tip (fig. 30). Tignum a broad archlike structure with a short acumen (fig. 31). Gonapsis with elongate central piece, its apical part long and knifelike, lateral pieces crescent (fig. 32). The apex of the female abdomen, the subgenitale and the spermatheca are shown in figs. 29, 34, 35.

The paratypes agree with the type in all essential details.

The two last described species *A. mira* and *A. dubia* are very closely allied. This becomes evident from a comparison of the sclerotised structures of the genital region which show only little differences (e.g. shape of gonapsis). On the other hand there are some apparently constant characteristics as the shape of Rs of males, or the colouration of veins in both sexes. As they originate from widely distant places, I think it better to deal with them as good species rather than to suggest a perhaps incorrect supposition of variability.

Key to *Anisochrysa* species so far known from Iran, Afghanistan and West-Pakistan

- 1. General colouration prevailing brown 2
- General colouration green 6
- 2. Wings hyaline without shadings 3
- Forewings with large brown shadings *makrana* (Iran)
- 3. Claws with basal dilation 4
- Claws simple, i.e. without dilation 5
- 4. Claws with a broad rectangular tooth (fig. 18) . *sybaritica* (Iran, Afghanistan)
- Claws dilated, but with only a small tooth (fig. 19)
- *derbendica* (Iran, Afghanistan)
- 5. Head pale brown without large spots, thorax dorsally pale brown
- *vartianorum* (W-Pakistan)
- Head with large brown spots especially on vertex, pronotum also with brown spots *venosa* (mediterranean region, Anterior Asia incl. Mongolei)
- 6. Head with interantennal spot 7
- Head without interantennal spot 8
- 7. Scape with dark spots; lateral margins of pronotum dark
- *murrensensis* (W-Pakistan, Afghanistan)
- Scape without spots, pronotum green with yellow median stripe
- *prasina* (see *venosa*, incl. Europe)

8. Head with dark spots on genae and clypeus, base of antennae green without spots *flavifrons* (see *prasina*)
 — Head only with black stripes on lateral margin of clypeus; base of antennae green, pedicel annulated with black 9
9. Crossveins of costal area totally dark; gradates and distal parts of anals dark *mira* (Iran)
 — Crossveins dark only at Sc; gradates and anals green; ♂: Rs thickened in both wings *dubia* (Afghanistan)

Summary

Four new species of Chrysopidae from Anterior Asia were described. One of them — *A. (Apertochrysa) afghanica* n.sp. is the first known species of this subgenus in the palaeartic region; only one species has previously been described from South Africa. The further three new species belong to the subgenus *Anisochrysa* s.str. This is a well known group of chrysopids which are to be found not only in the palaeartic, but also in the ethiopian and oriental region. In addition to the descriptions a key to all known *Anisochrysa*-species from Anterior Asia — so far 10 species — is given.

References

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In maart 1972 kwam een groep van 77 Duitse en Zwitserse fysiologen te Zürich bijeen voor een symposium over bovengenoemd onderwerp. Gestimuleerd door het feit dat Arthropoden in het algemeen, en insekten in het bijzonder voor fysiologisch werk uitstekend proefmateriaal bieden, houdt in genoemde twee landen een aanzienlijk aantal biologen zich op met onderzoek naar de gezichtszin van deze dieren. De keuze aan proefdieren is weer zeer klein: 14 auteurs gebruikten een tweevleugelige als onderzoekobject (*Musca*, *Calliphora*, *Drosophila*); binnen de Hymenoptera (20 bijdragen) uiteraard een overmaat aan onderzoek aan de honingbij; daarnaast bijdragen over de mierengenera *Formica* en *Cataglyphus*. De volgende secties komen achtereenvolgens aan de orde: anatomie van het optisch systeem, de optica van het samengestelde oog, biochemie van gezichtspigmenten, intensiteits-afhankelijke reacties, golflengte-afhankelijke reacties, patroonherkenning, oriëntatie, opslag van visuele informatie en tenslotte de methodiek van het kwantificeren van gedragsgegevens.

Het boekje is sober maar doelmatig verzorgd, en zeker zijn prijs waard. — W. N. ELLIS.